UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/699,359 | 10/30/2003 | Aditya Mohan | 200208216-1 | 2528 |

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| EXAMINER |
|---|
| HOSSAIN, TANIM M |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2445 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | Application No. | Applicant(s) |
|---|---|---|
| | 10/699,359 | MOHAN ET AL. |
| **Office Action Summary** | Examiner | Art Unit | |
| | Tanim Hossain | 2445 | |

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>01 March 2010</u>.

2a)☒ This action is **FINAL**.        2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-20,24 and 25</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20,24 and 25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail. Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)                    **Office Action Summary**                    Part of Paper No./Mail Date 20100601

## DETAILED ACTION

### Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-20, 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by

Bosley (U.S. 2003/0126122).

As per claim 1, Bosley teaches a processor-implemented method for searching for a data

object in a plurality of nodes forming a peer-to-peer network, the method comprising:  forming

Bloom-Filters at the nodes as a function of data available via the nodes (paragraphs 0008-0013,

0090, 0105); communicating the Bloom-filters between peer-to-peer coupled nodes of the peer-

to-peer network that have formed connections using incentive-based criteria to control whether

one node connects to another node (0014, 0039, 0093, 0105, 0112-0114); forming a search

expression for locating the data object (0008-0013); for a given node of the plurality of nodes,

evaluating other nodes of the plurality of nodes that connected to the given node based on the

Bloom-filters and the incentive based criteria to select one or more of the other nodes to

propagate the search expression (0065, 0103, 0105, 0112-0114, 0141, 0143, 0172); propagating

the search expression to the selected nodes (0065, 0103, 0105, 0112-0114, 0141, 0143, 0172);

and outputting a result of the search expression from nodes that satisfy the search expression
(0112-0114).

As per claim 2, Bosley teaches the method of claim 1, wherein forming respective Bloom
filters at the nodes includes combining Remote Bloom-filters (RBFs) received from peer-to-peer
coupled nodes of the respective nodes (0105, 0112-0114).

As per claim 3, Bosley teaches the method of claim 1, wherein selecting the nodes
includes forming a query Bloom-filter based on the search expression and comparing the query
Bloom-filter to the respective Bloom-filters (0105, 0112-0114).

As per claim 4, Bosley teaches the method of claim 3, wherein comparing the query
Bloom-filter to the respective Bloom-filters includes forming a ranking associated with
respective Bloom-filters as a sum of bits of the query Bloom-filter that match the bits of the
respective Bloom-filter (0090, 0105, 0112-0114).

As per claim 5, Bosley teaches the method of claim 3, wherein comparing the query
Bloom-filter to the Bloom-filters includes forming a ranking associated with respective Bloom-
filters as a count of bits of the query Bloom-filter that match the bits of the respective Bloom-
filter (0112-0114, 0168-0170, 0173).

As per claim 6, Bosley teaches the method of claim 1, wherein forming the respective
Bloom filters at the nodes includes forming the respective Bloom filters as a function of a local
Bloom-filter based on data locally accessible by the respective nodes (0090, 0105, 0112-0114).

As per claim 7, Bosley teaches the method of claim 1, wherein the peer-to-peer network
comprises a Gnutella network (0100).

As per claim 8, Bosley teaches a system comprising: a plurality of data processors

coupled via a peer-to-peer network arrangement, each data processor including: a network

interface arranged to provide one or more respective connections with one or more associated

data processor of the peer-to-peer network arrangement, the connections formed using an

incentive-based criteria (0014, 0039, 0093, 0112-0114, 0168-0170, 0173); a memory for storing

one or more respective remote Bloom filters representing data accessible via the associated

connections (0112-0114, 0168-0170, 0173); and a processing unit arranged to form a query

Bloom-filter based on a data query; for a given node of the plurality of nodes, evaluate other

nodes of the plurality of nodes that connected to the given node based on the Bloom-filters and

the incentive based criteria to select one or more of the other nodes to propagate the search

expression (0014, 0039, 0093, 0105, 0112-0114, 0141, 0172, Claim1); select a subset of the

connections as a function of the query Bloom-filter and the respective remote Bloom-filters

associated with the connections (0112-0114, 0168-0170, 0173); and send the data query to the

subset of the connections (0112-0114, 0168-0170, 0173).

As per claim 9, Bosley teaches the system of claim 8, wherein at least one data processor

of the plurality of data processors further includes a local data storage adapted for storing data

objects (0209).

As per claim 10, Bosley teaches the system of claim 9, wherein the memory of the at

least one data processor is configured for storing a local Bloom-filter representing data

accessible via the local data storage (0112-0114, 0168-0170, 0173).

As per claim 11, Bosley teaches the system of claim 8, wherein the processing units of

the data processors are further arranged to publish a Bloom-filter to a selected connection of the

one or more connections, the Bloom-filter representing data accessible via the respective data

processors (0112-0114, 0168-0170, 0173).

As per claim 12, Bosley teaches the system of claim 11, wherein the Bloom filter is

formed as a logical OR of the remote Bloom filters of the respective data processors except for

the remote Bloom filter associated with the selected connection (0112-0114, 0168-0170, 0173).

As per claim 13, Bosley teaches the system of claim 11, wherein at least one data

processor of the plurality of data processors further includes a local data storage adapted for

storing data, and the memory of the at least one data processor is configured for storing a local

Bloom-filter representing data accessible via the respective local data storage (0112-0114, 0168-

0170, 0173).

As per claim 14, Bosley teaches the system of claim 13, wherein the Bloom filter is

formed as a logical OR the local Bloom-filter; (0112-0114, 0168-0170, 0173) and the remote

Bloom filters of the respective data processor except for the remote Bloom filter associated with

the selected connection (0112-0114, 0168-0170, 0173).

As per claim 15, Bosley teaches the system of claim 8, wherein the peer-to-peer network

arrangement includes a Gnutella network arrangement (0100).

As per claim 16, Bosley teaches a computer-readable storage medium having instructions

stored thereon which are executable on a processor for performing steps comprising: forming

one or more respective peer-to-peer connections with one or more network peers of the processor

using an incentive-based criteria (0039, 0093, 0105, 0112-0114, 0141, 0172); receiving

respective remote Bloom-filters representing data accessible via associated peer-to-peer

connections (0112-0114, 0168-0170, 0173); forming a query Bloom-filter based on a data query

(0112-0114, 0168-0170, 0173); for a given node, evaluate other nodes connected to the given

node to select nodes to propagate a search expression associated with the query based on

incentive-based criteria and the one or more respective remote Bloom filters (0039, 0093, 0105,

0112-0114, 0141, 0172); selecting a subset of the peer-to-peer connections as a function of the

query Bloom-filter and the respective remote Bloom filters associated with the peer-to-peer

connections (0112-0114, 0168-0170, 0173); and sending the data query to the subset of the

connections (0112-0114, 0168-0170, 0173).

  As per claim 17, Bosley teaches the computer-readable storage medium of claim 16,

wherein the steps further include forming a local Bloom-filter based on data accessible via a

local data storage of the processor (0112-0114, 0168-0170, 0173).

  As per claim 18, Bosley teaches the computer-readable storage medium of claim 16,

wherein the steps further include sending a Bloom-filter to a selected peer-to-peer connection of

the one or more peer-to-peer connections indicating data accessible via the processor (0112-

0114, 0168-0170, 0173).

  As per claim 19, Bosley teaches the computer-readable storage medium of claim 18,

wherein the Bloom filter is formed as a logical OR of the remote Bloom filters of the processor

except for the remote Bloom filter associated with the selected peer-to-peer connection (0112-

0114, 0168-0170, 0173).

  As per claim 20, Bosley teaches the computer-readable storage medium of claim 16,

wherein the peer-to-peer connections utilize a Gnutella protocol (0100).

  As per claim 24, Bosley teaches a data processing arrangement, comprising:  means

comprising a processor to store data objects (0112-0114, 0168-0170, 0173); means comprising a

processor to form respective peer-to-peer data connections with one or more network peers using

an incentive-based criteria (0039, 0093, 0105, 0112-0114, 0141, 0172); means comprising a

processor to store remote Bloom-filters associated with respective peer-to-peer data connections,

the Bloom-filters indicating data accessible via the respective peer- to-peer data connections

(0112-0114, 0168-0170, 0173); means comprising a processor to form a query for locating one

or more data objects of the network peers (0112-0114, 0168-0170, 0173); means comprising a

processor to, for a given node of the plurality of nodes, evaluate other nodes of the plurality of

nodes that connected to the given node based on the Bloom-filters and the incentive-based

criteria to select one or more of the other nodes to propagate the search expression (0039, 0093,

0105, 0112-0114, 0141, 0172, Claim 1); and means comprising a processor to send the query to a

subset of the peer-to-peer data connections as a function of the query and the Bloom filters

associated with the respective peer-to-peer data connections (0112-0114, 0168-0170, 0173).

As per claim 25, Bosley teaches the data processing arrangement of claim 24, wherein the

peer-to-peer data connections utilize a Gnutella protocol (0100).


### Response to Remarks


Applicant's remarks filed on March 1, 2010 have fully been considered.

a. The rejections under 35 USC 101, 103, and 112 are hereby withdrawn.

b. Applicant asserts that Bosley "fails to disclose the propagation of a search expression

based on incentive-based criteria," and "evaluating multiple nodes to which a given node is

connected for purposes of selecting nodes to propagate a search expression as a function of
Bloom-filters and incentive-based criteria." Examiner respectfully disagrees.

In paragraphs 0103, and 0141, it is taught that contacts are made through certain criteria,
such as broadband connection between nodes, or by the number of attempts to contact a certain
node. This constitutes incentive-based criteria, as claimed. Paragraph 0083, for example,
discloses that node information is kept up to date. This means that the peer network comprising
the node's contacts is evaluated, as claimed. Paragraphs 0090 and 0114 teach the propagation of
Bloom filters to the nodes in the contact list. Further, claim 1 of Bosley, for example, teaches the
selection of nodes to propagate a search expression. Therefore, Bosley teaches that the network
neighborhood was formed through incentive-based criteria, the nodes of the network are
evaluated so that search expressions may be propagated, and Bloom-filters are propagated
between the nodes. As such, Bosley fully teaches the limitations of claim 1 as claimed, along
with its dependent claims. For similar reasons, Bosley fully teaches the limitations of
independent claims 8, 16, and 24, as well, along with their dependent claims.

### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time
policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE
MONTHS from the mailing date of this action. In the event a first reply is filed within TWO
MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tanim Hossain whose telephone number is (571)272-3881. The

examiner can normally be reached on 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vivek Srivastava can be reached on 571/272-7304. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Patent Examiner
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